Claims

What is claimed is:

1. A system for electronically controlling physical operation of dangerous equipment comprising:

an electronic key operable to store electronic key data;

an electronic key reader, operable to read the electronic key data from the electronic key;

an electronic key data analyzer operably connected to the electronic key reader, the electronic key data analyzer operable to analyze the electronic key data, the electronic key data analyzer further operable to produce disconnect control data based, at least in part, on the electronic key data; and

a disconnector operably connected to the electronic key data analyzer and operably connected to a piece of dangerous equipment, the disconnector operable to disable operation of the piece of dangerous equipment, based at least in part on the disconnect control data, the disconnector further operable to re-enable the operation of the piece of dangerous equipment, based at least in part on the disconnect control data.

2. The system of claim 1 wherein the disconnector is further operable to disable operation of the piece of equipment based on a physical lock.

3. The system of claim 1, wherein the electronic key reader is further operable to perform at least one of logging electronic key data, logging times when the operation of the piece of dangerous equipment is disabled, logging times when the operation of the piece of dangerous equipment is enabled, logging electronic key holder medical information, logging electronic key holder tasks, logging electronic key holder identity, scheduling dangerous equipment operation, scheduling related equipment operation and performing electronic data interchange.

4. The system of claim 1 further comprising a display, the display operable to present information concerning at least one of technical manual data, schedule data, equipment identification data, equipment status information and safety manual data.

5. The system of claim 1 where the electronic key data comprises at least one of key identifying information, key holder identity information, key holder medical information, key holder equipment access permissions, key holder equipment qualifications, key holder supervisor contact information, key holder security information and key holder task.

6. The system of claim 1 where reading the electronic key data comprises at least one of reading a magnetic strip on an electronic key inserted in the electronic key reader, receiving a radio frequency signal from an electronic key in transmission range of the electronic key reader and reading digital data from an integrated circuit memory chip on an electronic key.

7. The system of claim 1 where the disconnector is operable to control the flow of at least one of electricity, air, water and hydraulic fluid to the dangerous equipment.

8. The system of claim 1, further comprising a computer network, the computer network operably connected to one or more electronic key readers, one or more electronic key data analyzers, one or more disconnectors and one or more pieces of dangerous equipment, the computer network operable to carry a signal between one or more of the electronic key readers, the electronic key data analyzers, the disconnectors and the dangerous equipment.

9. The system of claim 8, wherein the signal comprises at least one of electronic key data, electronic key data analysis data, equipment data and disconnect control data.

10. The system of claim 8 wherein one or more disconnectors are further operable to disable operation of one or more pieces of dangerous equipment based on a physical lock.

11. The system of claim 8, wherein the electronic key reader is further operable to perform at least one of logging electronic key data, logging times when the operation of the piece of dangerous equipment is disabled, logging times when the operation of the piece of dangerous equipment is enabled, logging electronic key holder medical information, logging electronic key holder tasks, logging electronic key holder identity, scheduling dangerous equipment operation, scheduling related equipment operation and performing electronic data interchange.

12. The system of claim 8 further comprising a display, the display operable to present at least one of technical manual data, schedule data, equipment identification data, equipment status information and safety manual data.

13. The system of claim 8 where the electronic key data comprises at least one of key identifying information, key holder identity information, key holder medical information, key holder equipment access permissions, key holder equipment qualifications, key holder supervisor contact information, keyholder security information and key holder task.

14. The system of claim 8 where reading the electronic key data comprises at least one of reading a magnetic strip on an electronic key inserted in the electronic key reader, receiving a radio frequency signal from an electronic key in transmission range of the electronic key reader and reading digital data from an integrated circuit memory chip on an electronic key.

15. The system of claim 8 where the disconnector is operable to prevent the flow of at least one of electricity, air, water and hydraulic fluid to the dangerous equipment.

16. The system of claim 15, further comprising a central station operably connected to the computer network, the central station operable to disable the operation of one or more pieces of dangerous equipment and to re-enable the operation of one or more pieces of dangerous equipment, based, at least in part, on one or more pieces of electronic key data and/or one or more pieces of disconnect control data.

17. The system of claim 16, wherein the central station is further operable to perform at least one of logging electronic key data, logging times when the operation of one or more pieces of dangerous equipment is disabled, logging times when the operation of one or more pieces of dangerous equipment is enabled, logging electronic key holder medical information, logging electronic key holder tasks, logging electronic key holder identities, scheduling dangerous equipment operation, scheduling related equipment operation and performing electronic data interchange.

18. A computer readable medium storing computer executable components of a system for electronically controlling physical operation of dangerous equipment, the system comprising:

an electronic key reading component operable to read electronic key data from an electronic key;

an electronic key data analyzing component operable to analyze the electronic key data, the electronic key data analyzing component further operable to produce disconnect control data; and

a disconnecting component operable to disable operation of a piece of dangerous equipment, based at least in part on the disconnect control data, the disconnecting component further operable to re-enable the operation of the piece of dangerous equipment, based at least in part on the disconnect control data.

19. The computer readable medium of claim 18 further comprising a logging component operable to log information concerning at least one of the electronic key data, the electronic key reading component, the electronic key data analyzing component, the disconnect control data and the disconnecting component.

20. The computer readable medium of claim 19 further comprising a scheduling component operable to schedule the operation of one or more pieces of dangerous equipment.

21. The computer readable medium of claim 20 further comprising an EDI component operable to perform electronic data interchange.

22. The computer readable medium of claim 21 further comprising a central station component operable to perform logging, scheduling and/or EDI for one or more electronic key reading components, electronic key data analyzing components and disconnecting components.

23. A data packet adapted to be transmitted from a first computer process to a second computer process, comprising:

disconnect data related to disabling and/or re-enabling one or more pieces of dangerous equipment, the disconnect data generated by a key analyzer in response to analysis performed on one or more pieces of electronic key data read from an electronic key by an electronic key reader.

24. A method for electronically controlling physical operation of dangerous equipment comprising:

collecting electronic key data;

locally analyzing the electronic key data and producing disconnect data based, at least in part, on the analysis of the electronic key data and the status of a piece of dangerous equipment; and

locally controlling the operation of the piece of dangerous equipment based, at least in part, on the disconnect data.

25. The method of claim 24, further comprising:

locally logging data associated with at least one of the collected electronic key data, the disconnect data and the dangerous equipment operation.

26. The method of claim 25, further comprising:

locally scheduling the operation of one or more pieces of dangerous equipment based, at least in part, on at least one of the logged data, the electronic key data and the disconnect data.

27. The method of claim 26, further comprising locally engaging in or more electronic data interchanges.

28. The method of claim 24 further comprising locally displaying at least one of technical manual data, schedule data, equipment identification data, equipment status information and safety manual data.

29. A method for electronically controlling physical operation of dangerous equipment comprising:

collecting electronic key data;

centrally analyzing the electronic key data to produce disconnect data based, at least in part, on at least one of the electronic key data, the status of one or more pieces of dangerous equipment, the status of one or more pieces of related equipment and the identity of the dangerous equipment; and

centrally controlling the operation of at least one of one or more pieces of dangerous equipment and one or more pieces of related equipment based, at least in part, on the disconnect data.

30. The method of claim 29, further comprising:

centrally logging data associated with at least one of the collected electronic key data, the disconnect data and the dangerous equipment operation.

31. The method of claim 30, further comprising:

centrally scheduling the operation of at least one of one or more pieces of dangerous equipment and one or more pieces of related equipment based, at least in part, on at least one of the logged data, the electronic key data and the disconnect data.

32. The method of claim 31, further comprising centrally engaging in or more electronic data interchanges.

33. The method of claim 32 further comprising centrally displaying at least one of technical manual data, schedule data, equipment identification data, equipment status information and safety manual data.

34. A system for electronically controlling physical operation of dangerous equipment comprising:

means for reading electronic key data from an electronic key;

means for analyzing the electronic key data;

means for producing disconnect control data based, at least in part, on the electronic key data; and

means for disabling operation of a piece of dangerous equipment, based at least in part on the disconnect control data; and

means for re-enabling the operation of the piece of dangerous equipment, based at least in part on the disconnect control data.